

## A SPECIES OF FLEA (SIPHONAPTERA) ASSOCIATED WITH PORCUPINES COLLECTED IN SOUTH DAKOTA

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*Abstract.* — The flea *Chaetopsylla setosa* Rothschild is recorded for the first time from porcupines. This also extends the geographic range of *C. setosa* to include South Dakota. Geographic and host records are given for *C. setosa*.

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Most mammals with spiny fur or quills lack characteristic fleas. Where such ectoparasites do occur, they are highly modified structurally, as in the case of *Parodontis riggenbachi* (Rothschild), a flea of porcupines in Asia and Africa (Traub, 1980). There have been few reports of fleas on the nearctic porcupine, *Erethizon dorsatum* L. The earliest record was that of a single female collected in northwestern British Columbia described by Jordan (1932) as *Ceratophyllus adustus*. Smit (1983) placed the species in the new genus *Celeophilus*. Haas et al. (1980) suggested that *C. adustus* is a nest flea of woodpeckers, and Jordan's unique specimen came from a porcupine that had climbed a tree with a woodpecker's tree hole nest. Smit (cited as in litt. by Traub et al. (1983)), believed that *C. adustus* had also been collected from owls in the U.S., but this has not yet been confirmed. Dunn and Parker (1923) reported *Orchopeas howardi* (Baker) (cited as *Ceratophyllus wickhami* (Baker) from porcupines in the Bitter Root Valley of Montana, but Jellison and Senger (1973) stated that the fleas were actually *Orchopeas caedens* (Jordan), a common parasite of tree squirrels of the genera *Sciurus* and *Tamiasciurus*. The only other siphonapteran to be reported from North American porcupines is *Epitedia wenmanni* (Rothschild), collected in Massachusetts (Main, 1970). The present report adds a fourth species, namely *Chaetopsylla setosa* Rothschild 1906, to the list of fleas on these porcupines.

Two collections of these fleas were taken from porcupines in the northwestern part of Harding County, South Dakota. One lot contained 18 females and 6 males, and 7 females and a single male were taken from a second host. Abdomens of all females were swollen with eggs. *Chaetopsylla setosa* is well known as a parasite of bears and other carnivores in British Columbia and Montana. The only other ectoparasite collected in this study was *Eutrichophilus setosus* (Giebel), a common chewing louse of *Erethizon dorsatum* throughout the United States.

Collection data of the two porcupines includes the following: specimen number 20 (J156), male, 15 Dec. 1976, '733-200-93 = 8050 gm, captured 1.5 mi W of Hy. 79 on Hy. 20, Harding County, South Dakota; specimen no. 22 (J158), male, 22 Dec. 1976, 648-198-86-18 = 5750 gm, captured 0.6 mi S of Custer National Forest Northern boundary on Hy. 79.

The only known carnivores in this part of South Dakota that could serve as sources of *C. setosa* include coyotes, red fox, and bobcats. Bears have not been reported to occur in this area of South Dakota since 1910 (Andersen and Jones, 1971). Coyotes have been collected in Harding County by Schitoskey (pers. comm.), but to date no infestations of *C. setosa* have been found. However, Easton (1982) reported *Pulex irritans* L. from coyotes from Harding County. He also collected *Vulpes velox* Merriam, another potential carnivore host, in Shannon County. The occurrence of fleas on porcupines is a new host record, and extends the eastern distribution of *C. setosa* to northwestern South Dakota.

Geographic and host records for *C. setosa* include *Canis latrans* Say and *Ursus americanus* Pallas in the original description of the female by Rothschild (1906). Other records include *Ursus horribilis* Ord by Spencer (1936) and Wagner (1936); *Lynx canadensis* Kerr, *Ursus* sp., *Gulo luscus* (L.) by Holland (1949, 1985); *Canis latrans*, *Ursus americanus*, *Gulo gulo luscus* (L.), by Hopkins and Rothschild (1956), all from British Columbia, Canada. In the United States *C. setosa* has been collected in Montana from *Canis latrans* in Carter, Lake and Petroleum counties; from *Felis concolor* Goldman in Mineral County, west of Missoula, and from *Ursus americanus* in Lincoln County (Jellison et al., 1943; Hubbard, 1947). Senger (1966) listed *Lynx rufus*, in Missoula County, east of Missoula, *Ursus americanus* and *U. horribilis*, in Flathead County east of Kalispell, and a "human" in Ravalli County. Jellison and Senger (1937), included records cited in earlier reports. There is an unpublished record that has included mink as a host of *C. setosa*.

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